

NON-PUBLIC?: N
ACCESSION #: 8807060460
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Perry Nuclear Power Plant, Unit 1 PAGE: 1 of 3

DOCKET NUMBER: 05000440

TITLE: Operator Error causes Inadvertent Transfer of Recirculation Flow
Control System to Flux Auto, Resulting in Reactor Scram on High
APRM Levels

EVENT DATE: 06/05/88 LER #: 88-020-00 REPORT DATE: 07/01/88

OPERATING MODE: 1 POWER LEVEL: 081

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Gregory A. Dunn, Compliance Engineer
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SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On June 5, 1988, at 0326, a Reactor Scram occurred due to high Average Power Range Monitor neutron flux levels. During manual adjustment of reactor recirculation flow, the control room operator inadvertently caused the Recirculation Flow Control System to shift to automatic, causing an increase in recirculation flow, and the subsequent reactor scram.

The cause of this event was personnel error. At the time of the event, the Flux Controller was not properly adjusted for automatic operation, requiring operation in the manual mode. The operator did not exercise proper caution when making the flow adjustment, and inadvertently depressed the AUTO pushbutton on the controller.

To prevent recurrence, the automatic mode of Flux Control has been disabled until proper adjustments are completed, to prevent any unintentional transfers to automatic. Additionally, the operator involved in this event has been disciplined, and all licensed operators will be trained to this Licensee Event Report.

(End of Abstract)

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On June 5, 1988, at 0326, a Reactor Scram occurred due to Average Power Range Monitor (APRM) (IG) readings greater than the neutron upscale trip setpoint (118% of rated thermal power), due to operator error. At the time of the event, the plant was in Operational Condition 1 (Power Operation), at approximately 80% power, with reactor vessel (RPV) pressure approximately 977 psig.

At 0047 on June 5, 1988, control room operators completed a power reduction from 100% to approximately 80% rated thermal power in order to perform Main Turbine Valve testing. After completion of the required testing, power was maintained at 80% at the request of the System Dispatcher. As Xenon concentration increased following the power reduction, it was necessary for the reactor operators to periodically adjust Reactor Recirculation System (AD) flow to maintain power constant. At 0326, while attempting to increase reactor recirculation flow, a control room operator inadvertently depressed the AUTO pushbutton on the Recirculation System Flux Controller (TC), shifting the Flux Controller into automatic. Due to deviation between the automatic flux demand signal and the actual reactor power level, the Recirculation System Flow Control Valves (FCV) were automatically opened. The increase in reactor recirculation flow caused reactor power to increase, initiating a high APRM neutron level signal from all eight APRM channels. The Reactor Protection System (JC) initiated a full reactor scram, and all systems responded as designed. Plant operators responded to the event in accordance with approved operating instructions, and the plant was stabilized in a normal, Hot Shutdown condition. The highest neutron flux level reached during the transient was 120%, and the minimum water level after the scram was 140 inches above the top of active fuel. No other safety systems were actuated during this event. After initial investigation was completed, the Plant Manager granted permission to restart the plant on June 6, 1988.

The cause of the event was personnel error. The AUTO pushbutton is directly behind the setpoint adjustment slide switch and in the direct line of motion of the operator's hand when making an adjustment to the control setting. The operator in this event did not exercise sufficient care to avoid contact with the pushbutton. At the time of the transfer, a high deviation existed between the automatic and manual setpoints of the Flux Controller as a result of previous operator adjustments. This deviation resulted in the demand signal for flow control valve opening when the controller was inadvertently transferred to automatic. Prior to a normal transfer to automatic, the operator would have zeroed the controller deviation in accordance with Operating Instructions.

A contributing factor to the operator error was the operating status of the Recirculation Flow Control circuitry. The Flux Auto mode of flow control

would automatically adjust the flow control valves to compensate for changes in reactor power, such as those caused by Xenon transients. Due to bi-stable flow (vortexing) tendencies exhibited by the Recirculation System, however, operation in the Flux Auto mode of recirculation flow control was not being used until the system could be properly aligned for plant specific characteristics. Preparations for these modifications were in progress at the time of the event.

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The Reactor Recirculation Flow Control System is designed to provide various levels of manual and automatic recirculation flow and reactor power control. A recirculation flow control failure with increasing flow at full reactor power has been fully analyzed and is discussed in the Safety Analysis Report (USAR Section 15.4.5). The event which occurred on June 5, 1988 was within the envelope of this analysis, and all plant systems functioned as designed. This event, therefore, is considered to have no safety significance. No previous events were identified.

In order to prevent recurrence of this event, the Flux Controller has been disabled until it is properly tuned, and is ready for full automatic control. This will prevent accidental or inadvertent transfer of the system to automatic operation.

The operator involved in this event has been disciplined with respect to his actions. Additionally, as part of the normal training process, this Licensee Event Report will be discussed with all licensed operators during operator requalification training.

Energy Industry Identification System Codes are identified in the text as (XX).

ATTACHMENT # 1 TO ANO # 8807060460 PAGE: 1 of 1

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July 1, 1988
PY-CEI/NRR-0880 L

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
LERs 88-020 and 88-021

Dear Sir:

Enclosed are Licensee Event Reports 88-020 and 88-021 for the

Perry Nuclear Power Plant.

Very truly yours,

/s/ A. KAPLAN
Al Kaplan
Vice President
Nuclear Group

AK:cab

Enclosure: LERs 88-020 and 88-021

cc: T. Colburn
K. Connaughton

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